



U.S. Environmental Protection Agency
ENERGY STAR Program
Taylor Jantz-Sell
ENERGY STAR Lighting Program Manager
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Washington, DC 20460

**Philips Lumileds Lighting
Company**

370 West Trimble Road
San Jose, California 95131
USA

Subject: ENERGY STAR Specification for
Lamps (Light Bulbs) Version 1.0 Draft 3

Date: January 25, 2013

Dear Ms. Jantz-Sell:

Philips Lumileds regards the ENERGY STAR program as a key component of the solid-state lighting industry's efforts to promote high quality LED lamp solutions to consumers and businesses. We are pleased to offer feedback on items related to LED emitters in Draft 3 of the Lamps V1.0 specification, including some changes that we support as well as new proposals which raise new concerns.

Philips Lumileds provides extensive product design support to our customers, so it is critical that we fully understand what is required for a lamp to earn the ENERGY STAR. Regarding color angular uniformity, we agree with EPA's decision to change the requirement from $\Delta 0.004$ to $\Delta 0.006$ on the CIE 1976 (u' , v') diagram, and believe this is the right decision for the Program while industry works to refine the methods of measurement employed in these evaluations. However, we request clarification on the requirement and supplemental testing guidance language as we believe the language in Draft 3 is potentially subject to multiple interpretations. First, is the reference to beam angle noted in the ENERGY STAR requirement the value stated by the lamp manufacturer (e.g. the value printed in marketing literature), or does EPA intend for that value to be determined through goniophotometry at the laboratory? Regarding the specified scanning angles, by way of example, are we correct that a lamp with a 25° beam angle would require a total of 25 measurements: nadir plus 12 measurement angles (-12° , $-10^\circ \dots -2^\circ$, $\langle \text{nadir} \rangle$, $+2^\circ \dots +12^\circ$) on each of the two vertical axes? Are we also correct that among those measurements, a single value exceeding $\Delta 0.006$ from the weighted average point on the CIE 1976 (u' , v') diagram would cause a lamp to fail to achieve ENERGY STAR certification, even if all other specification requirements have been met? We request that the specification language be clarified to avoid conflicting interpretations of EPA's intent.

Regarding the correlated color temperature requirement, we continue to note that the proposed passing test requirement for color consistency allows for no units outside of a 7-step ANSI quadrangle, whereas one unit is currently permitted. To achieve a higher level of qualification (defect = 0), lamp manufacturers typically require a higher level of performance at the component level to achieve the target system performance. Eliminating the one-unit allowance will effectively increase the cost of certified LED lamps, as lamp manufacturers will need LED emitters providing a higher level of performance to meet this lamp-level requirement.

We again thank the EPA for the opportunity to provide input into the development of this important specification, and look forward to working together to resolve the above concerns.

Best regards,

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